

Modelling the relationship between a defined funding value and the ability to deliver against access performance targets

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The Australian health system continues to face the challenge of significant cost pressure. Demand growth for services has been faster than funding, and many health services are struggling to meet financial and operational performance targets. This presentation outlines the approach we took to with one jurisdictional health department to answer three questions:

1. Will the available funding allow achievement against all defined access targets for planned activity?
2. How should this available funding be distributed between health services to maximise performance against targets? and
3. What level of performance could be expected for a nominated additional funding amount?

Answering these questions was critical to planning services in an environment where:

- There is insufficient funding available to treat all patients who are currently waiting;
- There are many separate and clearly defined targets to be achieved at the level of individual health service and across the state as a whole;
- A substantial level of interdependency between activity categories exists. For example, an increase in non-admitted throughput can be expected to have a 'flow on' effect to other activity categories, but the degree of this impact was not known nor calculated; and
- All parties expressed a strong desire to limit the need for debate about the validity of the numbers use to inform funding discussions; preferring to focus on collaboratively achieving the required outcome.

The model provided the ability for all parties to:

- View and understand the funding required to sustain predetermined performance targets;
- 'Scenario test' a defined reduction value for total long waits across all health services, specialties and categories;
- 'Scenario test' the performance that could be achieved for a nominated additional funding value ie if the funding provided was 'x', the performance that could be achieved across all targets is 'y'

To meet the requirements, we:

- Used predictive modelling to estimate the unplanned activity for the financial year; including an allowance to vary growth rates between geographic regions;
- Considered patients already on the waiting lists as well as anticipating future additions;

- Predicted the date on which current and future patients on the list will convert to 'over target' (allowing for predicted movement between ready for care and non ready for care days where appropriate);
- Estimated and allowed for likely transfers between category within each list;
- Calculated known and likely removals from the lists within existing activity and funding arrangements;
- Analysed the results from all of these elements against committed and planned future funding to provide a complete system picture for the jurisdiction and by health service and specialty group.

This development work took six weeks in total and was delivered through an agile approach in which we incorporated one of the QH team members into our delivery team. This allowed us to co-define the business rules and then co-design and continue to refine and enhance the statistical algorithms applied to end the best possible prediction outcome.